



STATE OF WASHINGTON

## STATE BUILDING CODE COUNCIL

### Washington State Energy Code Development Standard Energy Code Proposal Form

Jan 2022

Log No. 21-GP3-020

Code being amended: ☐ Commercial Provisions ☒ Residential Provisions

Code Section # Table R406.3

Brief Description:

A broader application of appliances is anticipated with revisions to the WSEC-R to avoid issues with EPCA. In keeping with that, this proposal adds energy credits for additional appliances.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

#### TABLE R406.3

##### ENERGY CREDITS

| OPTION  | DESCRIPTION  | CREDIT(S)  |            |
|---|--|------------|------------|
|   |  | All Other  | Group R-2  |
| 3. HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS   |  |            |            |
| Only one option from Items 3.1 through <del>3.8</del> <u>3.11</u> may be selected in this category. Item 3.9 may be taken with Items 3.1 or 3.3 <sup>c</sup> only |  |            |            |
| <u>3.10</u>   | <u>Gas-fired heat pump(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.15.</u><br><br><u>For R-2 Occupancy, gas-fired heat pump(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.15, shall serve all units.</u>   | <u>TBD</u> | <u>TBD</u> |
| <u>3.11</u>   | <u>Combination water heating and space heating system shall include one of the following:</u><br><br><u>Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0.</u><br><br><u>or</u><br><br><u>For R-2 Occupancy, gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-</u> | <u>TBD</u> | <u>TBD</u> |

|   |   |            |            |
|---|---|------------|------------|
|   | <p><u>Fueled Residential Storage Water Heaters Version 1.0. shall serve all units.</u></p> <p><u>or</u></p> <p><u>For R-2 Occupancy, gas-fired heat pump(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.15, shall serve all units.</u></p> <p><u>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for solar water heating systems, the calculation of the minimum energy savings.</u></p>   |            |            |
| <p><b>5. EFFICIENT WATER HEATING OPTIONS</b></p> <p>Only one option from Items 5.3 through <del>5.5</del> <u>5.9</u> may be selected in this category. Items 5.1 and 5.2 may be combined with any option.</p> |   |            |            |
| <u>5.6</u>  | <p><u>Energy Star rated gas or propane water heater with a minimum UEF of 0.80.</u></p> <p><u>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency.</u></p>   | <u>TBD</u> | <u>TBD</u> |
| <u>5.7</u>  | <p><u>Energy Star rated gas or propane water heater with a minimum UEF of 0.91.</u></p> <p><u>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency.</u></p>   | <u>TBD</u> | <u>TBD</u> |
| <u>5.8</u>  | <p><u>Water heating system shall include one of the following:</u></p> <p><u>Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0.</u></p> <p><u>or</u></p> <p><u>For R-2 Occupancy, gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0. shall supply domestic hot water to all units.</u></p> <p><u>or</u></p> <p><u>For R-2 Occupancy, gas-fired heat pump water heater(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.15, shall supply domestic hot water to all units.</u></p> <p><u>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for</u></p> | <u>TBD</u> | <u>TBD</u> |

|     |  |     |     |
|-----|--|-----|-----|
|     | <u>solar water heating systems, the calculation of the minimum energy savings.</u>   |     |     |
| 5.9 | <p><u>Combination water heating and space heating system shall include one of the following:</u></p> <p><u>Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0.</u></p> <p><u>or</u></p> <p><u>For R-2 Occupancy, gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0. shall supply all units.</u></p> <p><u>or</u></p> <p><u>For R-2 Occupancy, gas-fired heat pump(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.15, shall supply all units.</u></p> <p><u>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for solar water heating systems, the calculation of the minimum energy savings.</u></p> | TBD | TBD |

## CHAPTER 6

### REFERENCED STANDARDS

|                           |  |                                   |
|---------------------------|--|-----------------------------------|
| ANSI                      | America National Standards Institute, 25 West 43rd Street, 4th Floor, New York, NY 10036         |                                   |
| Standard reference number | Title  | Referenced in code section number |
| <u>Z21.40.2-1996</u>      | <u>Gas-Fired, Work Activated Air-Conditioning and Heat Pump Appliances (Internal Combustion)</u> | <u>Table R406.3</u>               |
| <u>Z21.40.4-1996</u>      | <u>Performance Testing And Rating Of Gas-Fired, Air Conditioning And Heat Pump Appliances</u>    | <u>Table R406.3</u>               |
| NEEA                      | Northwest Energy Efficiency Alliance, 421 SW 6th Ave, Suite 600, Portland, OR 97204              |                                   |

| Standard reference number | Title   | Referenced in code section number |
|---------------------------|---|-----------------------------------|
| <u>NEEA-2019</u>          | <u>Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters, Vers. 1.0</u> | <u>Section R403.5</u>             |

Purpose of code change:

This proposal reinstates credits for fuel-fired water heating that exist in the 2018 WSEC-R and adds credits for gas heat pump equipment for space and water heating.

Since gas heat pumps can provide hot water for space or water heating alone, or for space and water heating together (“combination” systems), the proposal breaks out credits for each application.

Actual credit values will need to be calculated (by others) once baseline systems are defined – as part of addressing EPCA issues associated with the 2021 WSEC-R.

Finally, the proposal adds standards associated with gas heat pumps to Chapter 6.

Your amendment must meet one of the following criteria. Select at least one:

- |   |  |
|---|--|
| <input type="checkbox"/> Addresses a critical life/safety need.   | <input checked="" type="checkbox"/> Consistency with state or federal regulations. |
| <input type="checkbox"/> The amendment clarifies the intent or application of the code.                                     | <input type="checkbox"/> Addresses a unique character of the state.                |
| <input type="checkbox"/> Addresses a specific state policy or statute.<br>(Note that energy conservation is a state policy) | <input type="checkbox"/> Corrects errors and omissions.                            |

Check the building types that would be impacted by your code change:

- |   |   |  |
|---|---|--|
| <input checked="" type="checkbox"/> Single family/duplex/townhome | <input type="checkbox"/> Multi-family 4 + stories | <input type="checkbox"/> Institutional |
| <input checked="" type="checkbox"/> Multi-family 1 – 3 stories    | <input type="checkbox"/> Commercial / Retail      | <input type="checkbox"/> Industrial    |

|  |             |               |                           |
|--|-------------|---------------|---------------------------|
| Your name                                | Kevin Duell | Email address | kevin.duell@nwnatural.com |
| Your organization                        | NW Natural  | Phone number  | 503-610-7990              |
| Other contact name Ian Casey, NW Natural |             |               |                           |

## **Economic Impact Data Sheet**

**Is there an economic impact:** ☒ Yes ☐ No

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants, and businesses. If you answered "No" above, explain your reasoning.

This proposal will reduce construction costs by allowing more appliance choices for builders.

Provide your best estimate of the **construction cost** (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$[Click here to enter text.](#)/square foot (For residential projects, also provide \$[Click here to enter text.](#)/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

There is insufficient time to provide detailed construction cost calculations for all occupancies.

Provide your best estimate of the **annual energy savings** (or additional energy use) for your code change proposal?

[Click here to enter text.](#)KWH/ square foot (or) [Click here to enter text.](#)KBTU/ square foot

(For residential projects, also provide [Click here to enter text.](#)KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

Given requirements for Additional Energy Credits, energy savings should be similar to the 2021 WSEC-R.

List any **code enforcement** time for additional plan review or inspections that your proposal will require, in hours per permit application:

***Small Business Impact.*** Describe economic impacts to small businesses:

This should reduce economic impacts to small businesses.

***Housing Affordability.*** Describe economic impacts on housing affordability:

This should reduce economic impacts on housing affordability.

***Other.*** Describe other qualitative cost and benefits to owners, to occupants, to the public, to the environment, and to other stakeholders that have not yet been discussed: